

2007

# FIELDIANA Zoology

Published by Field Museum of Natural History

Volume 72, No. 3

December 19, 1977

## *Trachelyichthys exilis*, A New Species of Catfish (Pisces: Auchenipteridae) from Peru

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### ABSTRACT

*Trachelyichthys exilis* n. sp. is described from the Río Mamón, Perú, on the basis of three specimens. The new species is the second known member of the genus *Trachelyichthys* previously known only from a single individual of *T. decaradiatus* from Surinam. *T. exilis* is compared with *T. decaradiatus* and a redescription of the latter is presented.

### RESUMEN

So describe una nueva especie de la familia Auchenipteridae, *Trachelyichthys exilis*, basada en tres ejemplos desde el Río Mamón, Perú. Antes del descubrimiento de estos ejemplos, el genero *Trachelyichthys* se había conocido por un solo ejemplo de su especie tipo, *T. decaradiatus*, descrita por Mees (1974) desde Surinam. *T. exilis* se distingue de *T. decaradiatus* por tener la cabeza más ancha y altas, la distancia predorsal más larga, la espina pectoral más alargada, la placa dorsal más ancha, el hocico más corto, las bases de las aletas dorsal y anal más largas, las barbas mandibulares exteriores y maxilares más largas, y el proceso posterior del la elavícula de poca altura.

Mees (1974) described the monotypic genus *Trachelyichthys* and its species *T. decaradiatus* on the basis of a single individual (56.5 mm. SL) taken in the Karanambo area, Rupununi, Surinam. On July 24, 1975 we collected three additional specimens of this genus

US ISSN 0015-0754

Publication 1272

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in Perú, in the Río Mamón, a tributary of the Río Nanay, approximately 25 km. west of Iquitos (03°42'S, 73°16'W). The three specimens (FMNH 80476, FMNH 80477, CAS 39168) were taken in a shallow (approximately 1 m.) backwater area over a mud and sand bottom. The Río Mamón is a blackwater river and the surface water temperature was 28°C at the time of capture.

The three specimens represent the second known species of *Trachelyichthys*. The new species is compared with *T. decaradiatus* and a redescription of the latter is presented.

#### METHODS

Counts were made with the aid of radiographs; measurements were made to nearest 0.1 mm. using dial calipers and are presented as percent of standard length. All fin-ray elements were counted individually rather than tallying the last two as a single ray. Vertebral counts are post-Weberian complex vertebrae and include the

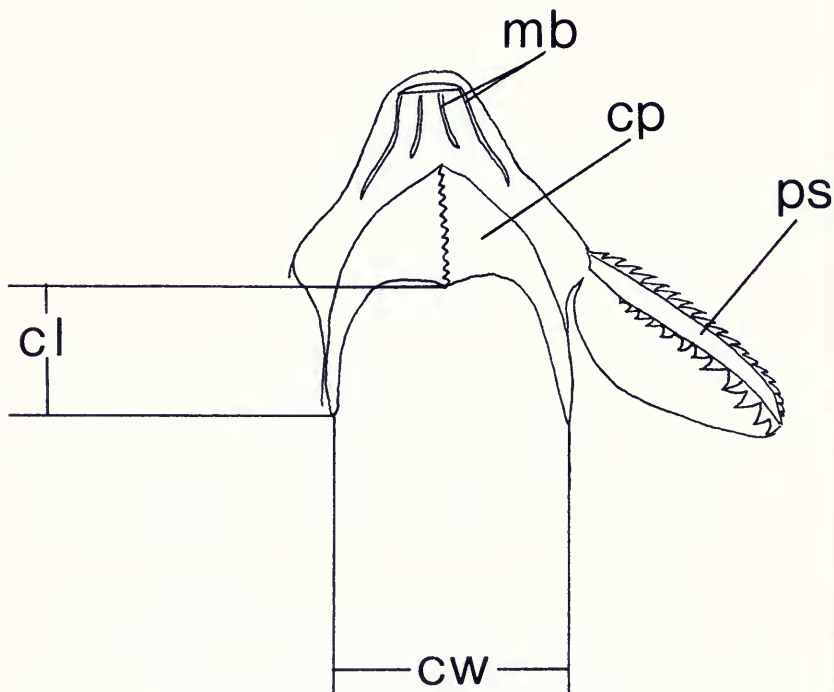


FIG. 1. Method of measuring coracoid width (cw) and length (cl) on ventral body surface, coracoid process (cp), mental barbels (mb), pectoral fin spine (ps).

terminal half-centrum and urostyle as one element. The following measurements were made by placing one point of the calipers and the tip of the snout (both squared at a 90° angle) lightly against the edge of a vertical surface; predorsal-fin length; snout length; snout-pectoral fin distance; snout-pelvic fin distance; snout-anal fin distance. All measurements from the snout to a fin are to the origin of that fin. Head width and depth are measured at the widest portion of the cleithrum. Body depth and width are measured at the origin of the pelvic-fin bases. Predorsal-fin length is measured from the snout to the posterior edge of the dorsal plate just anterior to the dorsal-fin spine. Cleithrum length is measured by placing one point of the calipers in the notch in the cleithrum just anterior to the pectoral-fin spine and the other point on the end of the posterior cleithral process. Pectoral-fin spine length is measured by placing one point of the calipers in the notch in the cleithrum just anterior to the pectoral-fin spine and the other on the tip of the spine. Dorsal-fin spine length is measured by placing one point of the calipers in the notch at the posterior edge of the dorsal plate and the other point on the end of the spine. Coracoid width is measured by placing the points of the calipers on the posterior-most ends of the coracoid (fig. 1). Coracoid length is measured by placing one edge of the calipers on the posterior-most end of the coracoid and the other on the posterior-most edge of the coracoid at the midline of the body, which can be located by running a fingernail over the central portion of the U formed by the coracoid. Dorsal plate width is measured by placing the points of the calipers against the bony edges of the narrowest portion of the dorsal plate anterior to the dorsal-fin spine. Interorbital width is the least bony interorbital width. Diameter of the eye is the greatest horizontal dimension of the eyeball. Other counts and measurements follow Hubbs and Lagler (1964).

#### MATERIAL EXAMINED

*Trachelyichthys decaradiatus* — BMNH 1971.7.29.30 - Holotype.

*Trachelyichthys exilis* n. sp. — See type material.

*Trachelyichthys exilis* n. sp. Figures 2-5.

*Holotype*. — FMNH 80476, 68.8 mm. SL.

*Paratypes*. — FMNH 80477, 42.3; CAS 39168, 42.4 mm. SL.

*Diagnosis*. — May be distinguished from *T. decaradiatus* by possessing a wider head (29.5-30.8, mean 30.2 *vs.* 26.5), a deeper

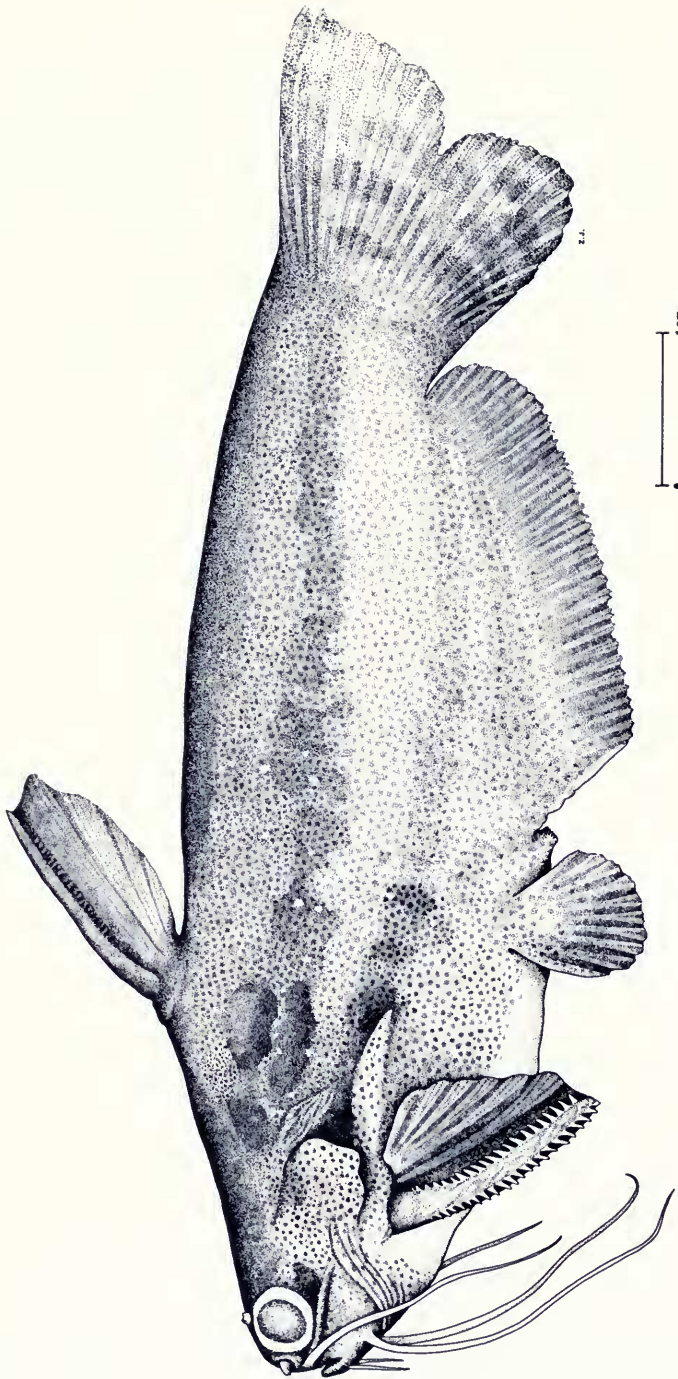


FIG. 2. Lateral view of the 68.8 mm. SL holotype of *Trachelyichthys exilis*, FMNH 80476.

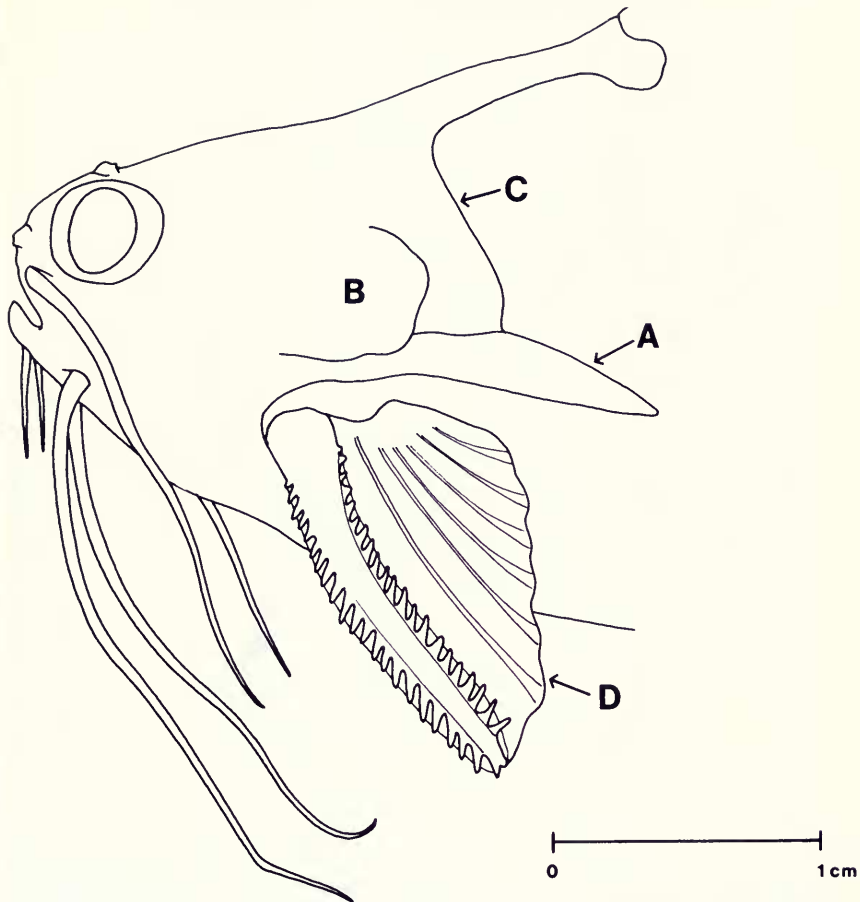


FIG. 3. Lateral view of head of holotype of *Trachelyichthys exilis*. A, posterior cleithral process, B, opercle, C, dorsal plate, D, pectoral fin.

head (22.6-24.3, mean 23.7 *vs.* 19.6), a longer predorsal distance (29.5-31.5, mean 30.3 *vs.* 28.3), a longer pectoral-fin spine (26.2-27.4, mean 26.7 *vs.* 20.2), a wider dorsal plate (8.2-8.5, mean 8.4 *vs.* 6.7), a shorter snout (2.6-4.0, mean 3.2 *vs.* 4.2), a longer dorsal-fin base (9.0-10.3, mean 9.6 *vs.* 8.0), a longer anal-fin base (39.9-45.2, mean 41.7 *vs.* 37.9), a longer maxillary barbel (36.6-38.7, mean 37.9 *vs.* 27.8) reaching to rear of dorsal fin in *T. exilis* and to front of dorsal-fin spine in *T. decaradiatus*, a longer outer mandibular barbel (28.4-34.3, mean 31.4 *vs.* 26.0) reaching to past base of dorsal-fin spine in *T. exilis* and to front edge of dorsal-fin spine in *T. decaradiatus*, and a shallower posterior cleithral process (3.3-3.5, mean 3.4 *vs.* 4.2) (fig. 3).

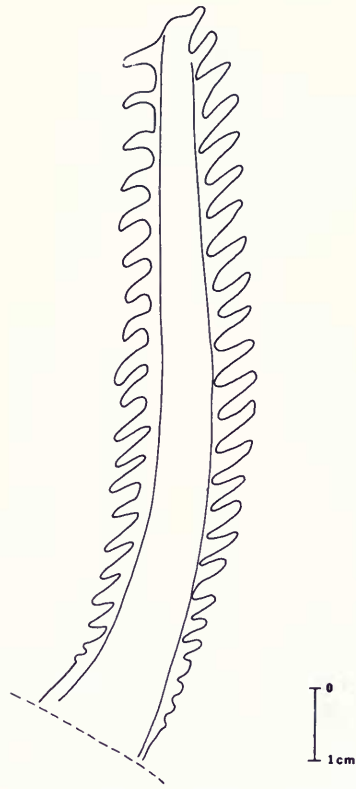


FIG. 4. Pectoral-fin-spine of holotype of *Trachelyichthys exilis*.

*Description.* — Data for holotype presented first, followed in brackets by values for paratypes, plus means for morphometric data in parentheses. Dorsal-fin elements I,4 (I,4 & I,5); anal-fin elements 36 (36 & 37); pelvic-fin elements 10 (10); pectoral-fin elements I,6 (I,6); vertebrae 31 (31).

Length of head 24.4 [27.3 & 28.6] (26.8); width of head 29.5 [30.3 & 30.8] (30.2); depth of head 24.3 [22.6 & 24.3] (23.7); depth of body 33.0 [25.5 & 29.1] (29.2); width of body 17.4 [12.9 & 13.0] (14.4); predorsal length 31.5 [29.5 & 30.0] (30.3); length of cleithrum 22.7 [21.2 & 21.5] (21.8); greatest depth of posterior cleithral process 3.5 [3.3 & 3.3] (3.4); length of pectoral-fin spine 26.6 [26.2 & 27.4] (26.7); length of dorsal-fin spine 25.7 [18.9 & 19.6] (21.4); length of coracoid 10.3 [7.1 & 7.6] (8.3); greatest width of coracoid 20.9 [19.1 & 20.0] (20.0); dorsal plate width 8.4 [8.2 & 8.5] (8.4); bony interorbital



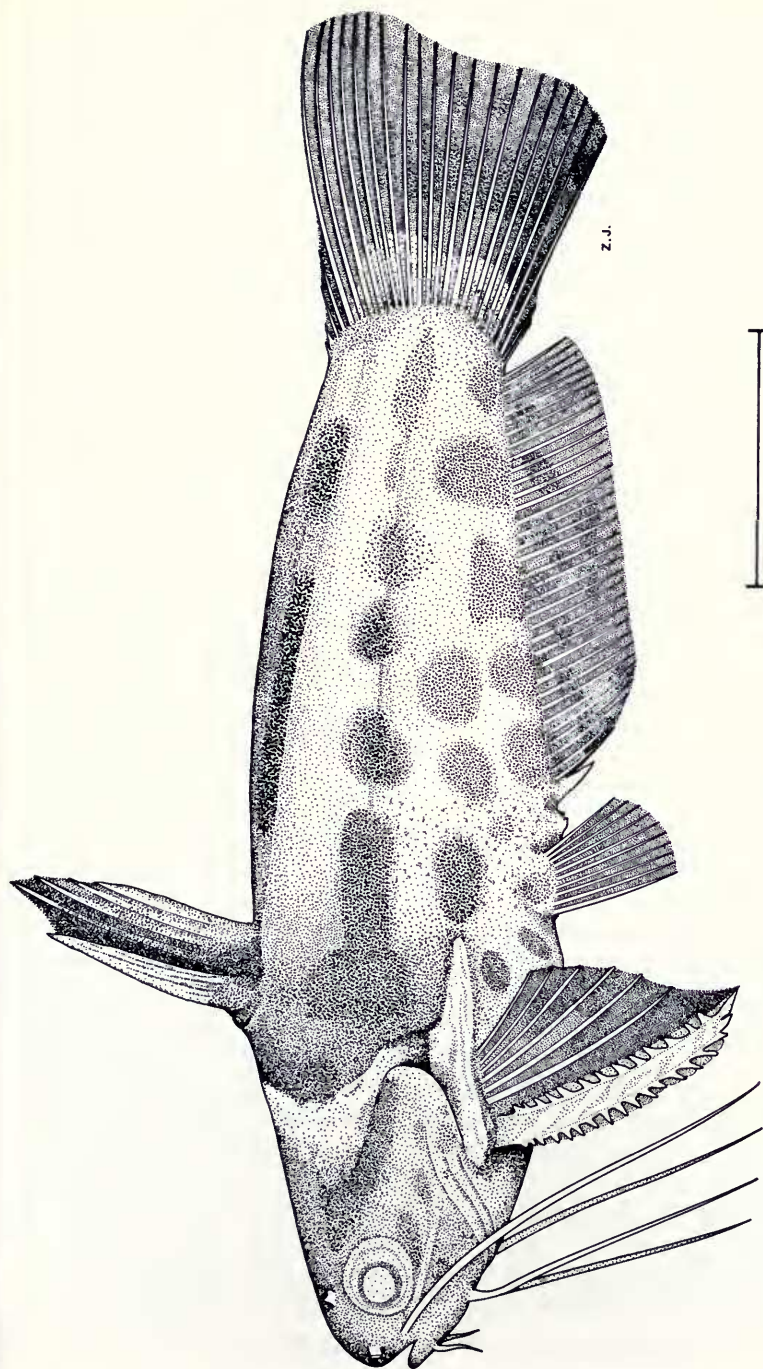


FIG. 5. Lateral view of the 42.3 mm. SL paratype of *Trachelyichthys exilis*, FMNH 80477 showing variable color pattern.

width 12.5 [12.0 & 12.8] (12.4); diameter of eye 8.7 [8.5 & 8.7] (8.6); length of snout 2.6 [3.1 & 4.0] (3.2); width of gape 14.5 [12.3 & 13.7] (13.5); length of dorsal-fin base 9.0 [9.7 & 10.1] (9.6); length of anal-fin base 45.2 [39.9 & 40.1] (41.7); length of upper caudal-fin lobe 29.1 [25.9 & 30.3] (28.4); length of lower caudal-fin lobe 25.1 [23.1 & 25.3] (24.5); length of caudal peduncle 10.6 [10.2 & 11.1] (10.6); depth of caudal peduncle 15.1 [14.2 & 14.4] (14.6); distance from snout to pectoral-fin origin 17.6 [20.0 & 20.3] (19.3); distance from snout to pelvic-fin origin 45.6 [42.4 & 45.6] (44.5); distance from snout to anal-fin origin 57.4 [51.4 & 54.4] (54.4); length of maxillary barbel 38.5 [36.6 & 38.7] (37.9); length of outer mandibular barbel 31.5 [28.4 & 34.3] (31.4); length of inner mandibular barbel 7.6 [6.6 & 7.1] (7.1).

Dorsal-fin spine smooth on anterior surface, posterior surface with 44 (holotype) small barbs. Pectoral-fin spine with barbs on both anterior (23 in holotype) and posterior (20 in holotype) surfaces, those on anterior surface slightly larger (fig. 4). Lateral line developed over its entire body length, but only conspicuous from tip of posterior cleithral process posteriorly to caudal-fin origin.

*Color in alcohol.* — (of holotype) Head and body cream with dark brown to black markings; top of head mostly black, sides of head mottled with black; opercular membrane cream with scattered brown pigment; ventral surface cream from anus forward to anterior edge of coracoid where there is a heavy concentration of brown pigment following contour of coracoid bone, forward to tip of lower jaw; inner and outer mental barbels cream, contrasting with brown chin; maxillary barbels black dorsally and cream ventrally; sides of body with a black, blotchy stripe running from supraclavicle posteriorly along lateral line to caudal-fin base, anterior portion of stripe forming a large blotch which almost fills tympanum over air bladder, an area surrounded dorsally by dorsal plate, anteriorly by supraclavicle and ventrally by posterior cleithral process; posterior cleithral process surrounded by black, forming a short black stripe which extends from tip of posterior cleithral process towards anal-fin origin; dorsal midline cream (viewed from top) with a black stripe below on either side, beginning about one eye-diameter behind dorsal-fin base and running posteriorly to caudal-fin base; areas between black stripes cream, overlaid by a heavy peppering of brown pigment; caudal fin cream with brown spots tending to form vertical bars; basal portion of anal fin with a peppering of brown pigment as on body, center portion of



fin cream (forming a longitudinal light band), distal portion heavily pigmented with black; pelvic fins cream with a black band on distal margin and another about one-third distance from base of fin; pectoral fins with black pigment covering most of first three rays and distal portion of fourth, last two rays cream, dorsal fin with black on membranes of anterior portion, last two rays cream.

Color of the young- (paratypes) General coloration of body and head paler than adult; head with a large black blotch on top, posterior to eyes, two small blotches posterior to large blotch and in advance of dorsal-fin origin; black stripes on body of adult broken up into a series of blotches in young; several brown blotches present between midline of body and anal-fin base.

*Color in life.* (taken from a 35 mm. Kodachrome of holotype). Color pattern as described above for holotype with following exceptions: ventral surface white instead of cream; cream color recorded for rest of body with a pinkish tinge; mandibular barbels yellowish; cream color of caudal fin with a yellowish tinge.

*Name.* — *exilis*, slim or slender, referring to the slender posterior cleithral process..

#### **Trachelyichthys decaradiatus** Mees. Figures 6 and 7.

Additional information on the holotype of *T. decaradiatus* is presented for comparison with *T. exilis*. Standard length 56.5 mm.

Dorsal-fin elements I,4; anal-fin elements 36, pelvic-fin elements 10; pectoral-fin elements I,6; vertebrae 31.

Length of head 24.9; width of head 26.5; depth of head 19.6; depth of body 28.1; width of body 11.7; predorsal-fin length 28.3; length of cleithrum 19.8; greatest depth of posterior cleithral process 4.2; length of pectoral-fin spine 20.2; dorsal-fin spine broken; length of coracoid 7.8; greatest width of coracoid 19.5; dorsal plate width 6.7; bony interorbital width 11.8; diameter of eye 8.5; length of snout 4.2; width of gape 12.9; length of dorsal-fin base 8.0; length of anal-fin base 37.9; length of upper caudal-fin lobe 25.8; length of lower caudal-fin lobe 22.6; length of caudal peduncle 10.3; depth of caudal peduncle 14.5; distance from snout to pectoral-fin origin 18.2; distance from snout to pelvic fin origin 43.0; distance from snout to anal-fin origin 53.8; length of maxillary barbel 27.8; length of outer mandibular barbel 26.0; length of inner mandibular barbel 7.8.

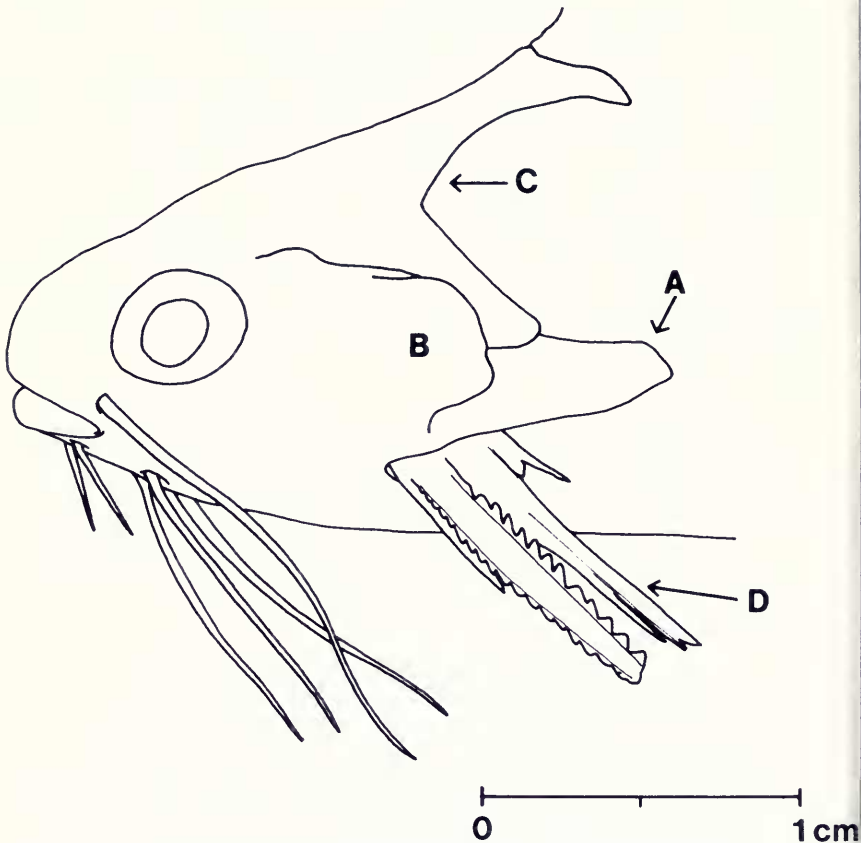


FIG. 6. Lateral view of head of holotype of *Trachelyichthys decaradiatus*, BMNH 1971.7.29.30, A, posterior cleithral process, B, opercle, C, dorsal plate, D, pectoral fin.

## DISCUSSION

*Trachelyichthys exilis* is clearly a member of the genus *Trachelyichthys*, described by Mees in 1974. *Trachelyichthys* is the only auchenipterid genus having the combination of 10 pelvic-fin elements, a truncate caudal fin and lacking an adipose fin. *Trachelyichthys exilis* is easily distinguishable from the only other member of the genus, *T. decaradiatus*, by its much shallower posterior cleithral process (fig. 3) in addition to differing in a number of body proportions, the most important being a wider and deeper head, a wider dorsal plate, and a longer pectoral-fin spine.

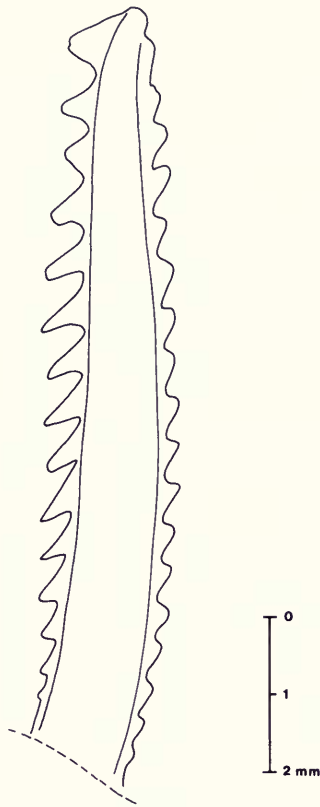


FIG. 7. Pectoral-fin spine of holotype of *Trachelyichthys decaradiatus*.

The discovery of *T. exilis* in Perú illustrates the general pattern of faunal similarities between the Peruvian Amazon and the distant drainages of the Guianas, where *T. decaradiatus* occurs. Lowe-McConnell (1975) points out that the areas peripheral to the central Amazon basin exhibit greater similarities among themselves than they do with the fauna of the central basin, the Peruvian Amazon having more than 100 species in common with the Guianas. Lowe-McConnell interprets this pattern as the remnants of a primitive fauna that had spread around the Amazon basin when it was possibly a marine gulf, which later was replaced by large lakes. Mees (1974) suggested that *Trachelyichthys* is most closely related to *Trachelyopterus*, a genus which occurs in the central Amazon basin. If indeed *Trachelyichthys* is a member of a primitive fauna then *Trachelyopterus* might have been derived from this genus.

## ACKNOWLEDGEMENTS

We are grateful to Teresa Greenfield and George Gutierrez for assistance in field work and to Hernán Gutierrez for providing transportation in his boat from Iquitos. Alwyne C. Wheeler, British Museum (Natural History), kindly loaned the holotype of *T. decaradiatus*. Teresa Greenfield reviewed the manuscript and prepared the Spanish abstract. Zbigniew T. Jastrzebski, Field Museum, drew Figures 2 to 7. This research was supported by Department of Interior Contract No. 14-16-0008-786 to Southern Illinois University at Edwardsville.

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